STRATEGIC PLANNING WORKSHOP SUMMARY
MAY 6-7, 2010

FOR THE EMERGING FRONTIERS OF SCIENCE OF INFORMATION SCIENCE AND TECHNOLOGY CENTER

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The Courage Building Company™

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The following summary has been organized with the intention of being a helpful working document for the Science of Information Center as they further refine and develop their strategic plan. This document is divided into five sections:

I. Introduction

A. Overview

Giant Leap Consulting provided at two-day strategic planning workshop on May 6 – 7, 2010 for the Emerging Frontiers of Science of Information Science and Technology Center (STC). The participants at this workshop included:

STC Members	
Wojtek Szpankowski	Purdue
Ned Howell	Purdue
Ananth Grama	Purdue
Aditya Mathur	Purdue
Mark Ward	Purdue
Mike Atallah	Purdue
Chris Clifton	Purdue
Vernon Rego	Purdue
Jennifer Neville	Purdue
John Rice	Purdue
Robert Rwebangira	Howard
Deepak Kumar	Bryn Mawr
Peter Shor	MIT
Sergio Verdu	Princeton
Andrea Goldsmith	Stanford
Tsachy Weissman	Stanford
Shankar Subramaniam	UCSD
Bin Yu	UC Berkeley
David Tse	UC Berkeley
P.R. Kumar	UIUC
Todd Coleman	UIUC
Olgica Milenkovic	UIUC
NSF Representatives	
Joan Frye	NSF
John Cozzens	NSF
Pam O'Neil	NSF
Other Observers	
Brian Pianfetti	UIUC
Matthew Lawrence	NEES Consultant
Perry Kirkham	Purdue
Brittany Painter	Purdue
Richard Buckius	Purdue

Al Rebar	Purdue
Giant Leap Consulting	
Bill Treasurer	GLC
Ahli Moore	GLC
Justine Foo	GLC
Laura Shiver	GLC

The two overriding purposes of the session were to align the members that collectively represent the Science of Information STC, and to satisfactorily comply with the National Science Foundation's (NSF) requirement of developing a center-level strategic plan. The workshop was sponsored by NSF and facilitated by Giant Leap Consulting (GLC), including Bill Treasurer, Ahli Moore, Justine Foo, and Laura Shiver.

B. WORKSHOP OBJECTIVES

The workshop objectives were:

- Introduce and employ a strategic planning framework capable of advancing the Center's objectives of being an agile structure that can rapidly respond to emerging opportunities.
- Develop the Center's mission, top-level goals, objectives and measures, critical success factors, and actions.
- Identify concrete actions for executing the strategic plan.
- Discuss approaches for ensuring high levels of collaboration among the Center members and contributing institutions.
- Think together (and have some fun too!)

II. Executive Summary

On May 6 – 7, 2010 the Science of Information STC met to align its membership and begin the development of a center-level strategic plan. The workshop was sponsored by NSF and facilitated by GLC.

The workshop objectives included the development of a structured strategic planning framework that included its mission, top-level goals, objectives and measures, and actions.

The first day of the workshop began by building a common understanding on what the strategic plan would include and creating a foundation of understanding related to the purpose of the STC and the interest of the three research thrust areas.

Over the course of the two days, the STC members and workshop participants collaborated to develop the following strategic plan elements:

Strategic Planning

- Mission Statement:
  The Mission of the Center for Science of Information is to develop principles and human resources guiding the extraction, manipulation, and exchange of information, integrating space, time, structure, and semantics.

- Goal Statements (detailed definitions of each can be found in the Section III)
  - Education, Human Resources, and Diversity
  - Knowledge Transfer
  - Leadership and Management
  - Integrative Research
  - Ethics

- SMART Objectives (for four of the five goal areas)
- Critical Success Factors (at the goal level)
- Action Items (organized under the Critical Success Factors)

Courageous Leadership

GLC delivered a short presentation on the role that courage can play in both leadership and team development.

Next Steps

GLC explained that they would provide a workshop summary and draft strategic plan back to the STC within two weeks of the workshop. From that point, STC leadership will take responsibility for completing the first draft of the strategic plan and submitting to the NSF for input.

III. Day One: Thursday, May 6, 2010

The work of developing the strategic plan for the STC began on day one, which also included time for the members of the STC to build relationships, begin the process of identifying collaborative links, and become more familiar with the work of the thrust areas. Elements of day one included:

- Introduction exercise
- Overview of the strategic planning process
- Discussions on each of the thrust research areas
- Mission statement development
- Crafting of top level goal statements

This section provides a summary of those segments.

A. Welcome and Introductions

Wojciech Szpankowski, PI of the STC, called the workshop to order and introduced Richard Buckius, the Vice President for Research at Purdue University. Buckius expressed the University's excitement about the start of and affirmed the university's support for the STC. Joan Frye, STC Program Manager from NSF, also welcomed the STC members and confirmed the importance of having the strategic plan in place by the official center start date. Frye also clarified that the plan would be updated annually and is not intended to micromanage the research. Laura Shiver from GLC provided the opening and context-setting remarks for the workshop, introduced the GLC team members, reviewed the workshop objectives, and reviewed the agenda for day one and two.

To introduce the STC participants to one another, GLC asked them to provide the following details:

- Name
- Their current university affiliation
- An example from their professional career of when a clearly articulated strategy served them well. For those who did not have a positive experience to draw from, they were asked to describe how the lack of a strategy had limited their success

B. Winning at Strategy

Following the individual introductions, Wojtek shared an overview of the STC. In addition to reviewing the Center direction and purpose, he provided updates on specific Center related work. Mark Ward shared a brochure that has been drafted related to the Center and asked for members to provide feedback. Participants also had questions related to the development of undergraduate interest in the Science of Information. Wojtek explained that Purdue University will offer a one-credit course where STC members located at Purdue can present their research. Eventually, course notes and materials will be distributed across all institutions online.

Following Wojtek's perspective, Bill Treasurer outlined the process that GLC would be using to facilitate the STC through the development of their strategic plan.

The participants asked for insight from the NSF on elements that have helped to contribute or limit the success of other STCs. Joan Frye explained that the Association for the Advancement of Science is studying the Centers and looking specifically at outcomes, however they are at least a year away from the full report. Frye did highlight that clear integration is needed across the STC and that this is an area where some STCs struggle as it is very easy for the individual researchers to become isolated within their area of expertise.

C. Research Thrust Presentations

Communication and collaboration are vital components of the STC. To build greater knowledge across the entire team of the work being conducted within each of the research areas, each thrust area made a brief presentation followed by large group discussion. The purpose of the discussion was to seek clarity and list "considerations" – potential actions that the Center should consider pursing. The list of considerations generated for each of the thrust areas are listed below.

Biology Thrust

- Each researcher getting money from this Center will commit to giving one talk in a different institution to encourage cross-pollination of ideas.
- Develop a brochure related to research interests of different thrusts and researchers.
- Reduce the language barrier between disciplines by holding a Language of Biology talk for engineers and/or developing a dictionary of common and important terms defined in ways that are clear to different fields.

COMMUNICATION THRUST

- Make information theory move by making space for people to give feedback and then considering through a rigorous lens.
- Deep mathematics with fundamental limits, but look at how we formulate the problems. Train students in this process of looking at biological systems to formulate problems in a new way.
- A common language to communicate the problems.
- Educate ourselves in order to find the most fruitful areas for collaboration.
- Create an environment that is dynamic that we can learn from and communicate with one another.
- Create and offer short, mid-term courses for one another.

KNOWLEDGE THRUST

- Identify research questions on which to concentrate.
- Seminar series on quantum information.
- Hold seminars and give papers to students for them to review and critique ideas. Engage them in the topic selection and idea generation stages. This can increase student engagement in the process.
- Student exchanges between the sites.
- Record meetings and post online.
- Organize student gatherings at conferences.
- Mentoring program for graduate and post-doc students to develop faculty.

D. MISSION STATEMENT DEVELOPMENT

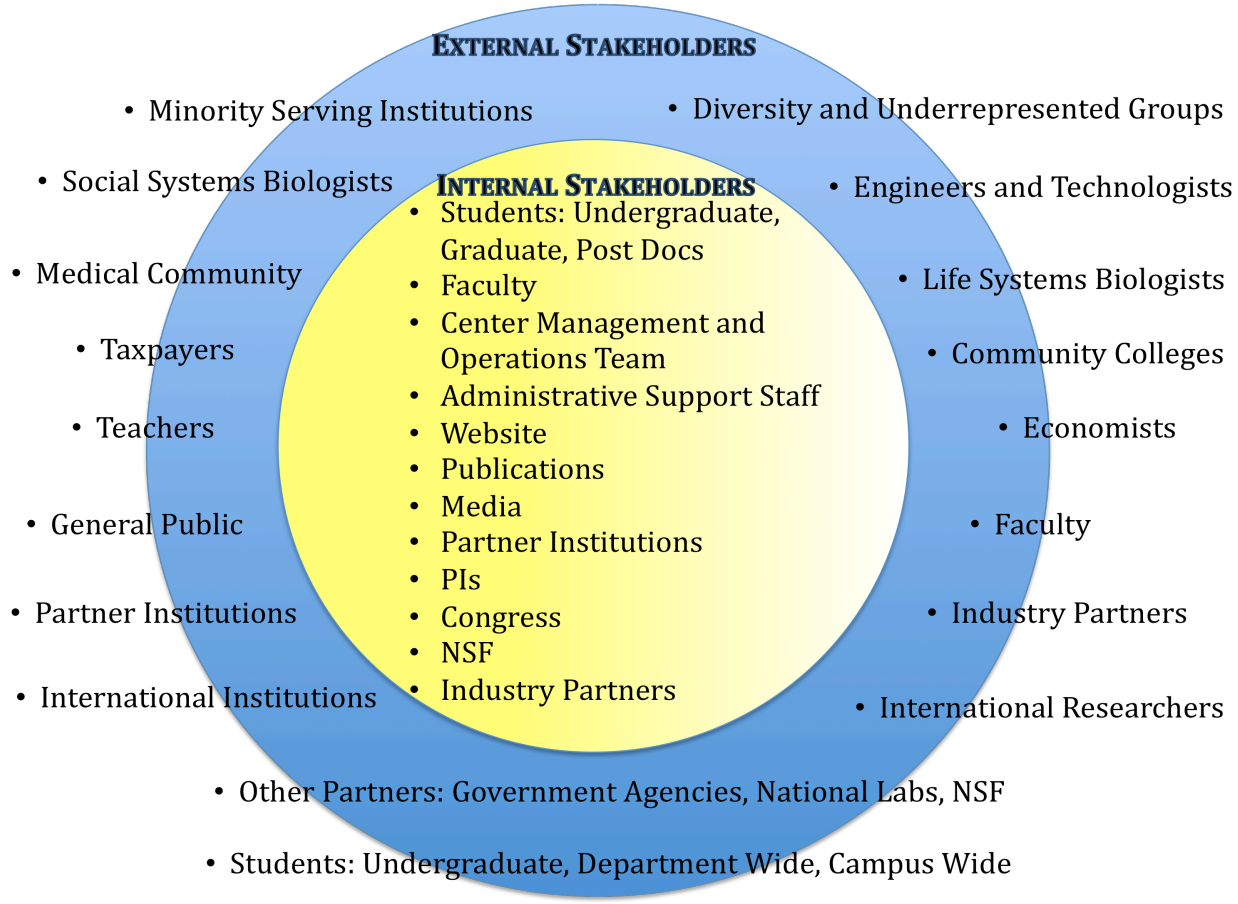
During the proposal-writing phase, some members of the STC worked together to create a mission statement. Few members had participated in the creation of it, so time was spent during the workshop to revise the mission statement. A mission statement should be brief, flexible, and distinctive and provide focus to the purpose of the STC. To help the various areas focus on the work of the overall STC, GLC lead the participants through several exercises related to the development of a mission statement. Participants were asked to individually create an "elevator speech". The purpose of the speech was to succinctly describe the work of the STC, in laymen's terms. Participants were encouraged to answer the following questions:

- What do we do?

- Who do we do it for?
- How do they benefit?

After a brief period of individual brainstorming, the participants were challenged to stand-up and introduce themselves to one another using their elevator speech. Many participants found this to be a helpful exercise as they heard the disparate way people described the work of the STC and the variety of words they used.

Following the elevator speech, Bill led small groups through the process of identifying the internal and external stakeholders of the STC. The purpose of this exercise was to remind the STC members of their accountability to their stakeholders and the wide array of people and organizations who could benefit from their success. The composite list of all the small groups is provided below:



The purpose of these exercises was to prime the workshop participants for the creation of a STC mission. Members identified that it is the breadth of the team and the collaborative element that adds uniqueness to this research, and that the mission statement should describe to both the general public and the scientific community the purpose of the STC.

The mission statement developed by the proposal team was reviewed and is included below: *The STC Science of Information Center aims at integrating research and teaching activities aimed at investigating the role of information from the fundamental theoretical underpinning to the science and engineering of novel applications.*

Next, the participants were divided into small groups. Each group was tasked with developing a draft mission statement. Following 15 minutes of drafting, the groups gathered to review one another's work. Rather than voting on a "favorite" version, the participants decided to create a new version, leveraging the strongest words and ideas from each groups' draft version. Four volunteers were identified to work on refining and combining the three drafts into a working mission statement. Their revised mission statement would be discussed on day two. Below are the three drafts. Below the draft mission statements, a list of considerations is provided. The volunteers used these questions, concerns, and suggestions as they developed their draft.

Draft Mission Statements

- Our mission is to advance frontiers in the science of information, including new fundamental theory and its application to a broad spectrum of problems in the basic sciences, engineering, and the social sciences.
    - Speaks to what the Center is about.
    - Does it exclude people by referencing science of information?
    - Advancing frontiers was both liked and disliked.

- To create foundations of information theory that encompasses multiple disciplines from social sciences, to sciences, and engineering that will enable a new understanding of the world we live in.
    - Liked foundations of information theory and will enable a new understanding.
    - A common theme of social sciences, sciences and engineering between the drafts.
    - Consider the use of information age.
    - Seems like a foundation already exists, should we create a foundation again?
    - Consider advance foundations.
    - Consider foundations and frontiers.
    - Advance the boundaries of information theory.
    - Frontiers seems too clichéd.

- To develop analytical tools for the quantification, extraction, and manipulation of information in natural, social, and technological domains.
    - Likes: Develop analytical tools - suggest a deliverable, quantification and extraction, and natural, social, and technological domains.
    - What is the natural domain?
    - Consider replacing domain with science.

- To develop principles and human resources guiding the extraction, manipulation, and exchange of information, integrating space, time, structure, and semantics.
    - Likes: Space, time, structure, and semantics.
    - Feels concrete.
    - Consider adding a reference to application
    - Concern that it does not have much meaning to a layperson.

E. GOAL STATEMENT CREATION

Bill introduced the purpose of the goal statements as high-level imperatives, long-term in nature, that collectively define the accomplishment of the mission. To assist the process of developing the five goal statements, prior to the session, GLC and NSF collaborated to develop draft statements that the participants could then review, revise and ratify. The original five draft goal statements were:

First Draft Goal Statements

- **Education, Human Resources, and Diversity:**
  Integrate cutting edge, interdisciplinary research and education efforts across the Center that will embrace and enhance innovative training and impact the diversity of the work force.
- **Knowledge Transfer:**
  Develop significant mechanisms and pathways to facilitate intellectual exchanges between institutions and partners of various types that will support the sharing of knowledge, information, and application of new technology.
- **Leadership and Management:**
  Envision and enable the Center's mission through inclusive and transparent decision-making; inspire Center members; and facilitate collaborative efforts.
- **Integrative Research:**
  Create an inclusive collaborative research culture that crosses disciplinary and institutional boundaries and is embedded throughout Center's activities.
- **Ethics:**
  Implement a cross-disciplinary and multi-institutional ethics program that will inform and guide all members of the Center on the ethical and responsible conduct of scientific research.

The participants voted to revise all five of the goal statements. Through a group process, they developed the following goal statements. The final list of all five goal statements are provided below and can also be found is Section V of this report.

Final Draft Goal Statements

- **Education, Human Resources, and Diversity:**
  Integrate cutting-edge, multidisciplinary research and education efforts across the Center to advance the training and diversity of the work force.

- **Knowledge Transfer:**
  Develop effective mechanisms for intellectual exchanges between the center and external stakeholders to support the sharing of knowledge and the application of new technology.

- **Leadership and Management:**
  Accomplish the Center's mission through:
  - inspirational leadership.
  - inclusive and transparent decision-making.
  - catalyzing new research opportunities.
  - facilitating collaborative efforts.

- **Integrative Research:**
  Create a shared intellectual space, integral to the Center's activities, providing a collaborative research environment that crosses disciplinary and institutional boundaries.

- **Ethics:**
  Implement a multidisciplinary and multi-institutional program to inform and guide all members of the Center on the ethical and responsible conduct of scientific research.

IV. Day Two: Friday, May 7, 2010

The second day of the workshop continued to focus on the development of the STC's strategic plan. Highlights included:

- Mission statement completion
- Ethics Goal discussion
- SMART Objectives
- Courageous leadership and teaming
- Critical Success Factors
- Action Item development
- Next steps discussion

A. Mission Statement Review

The STC volunteers presented their revised version of the mission statement, which was:

- *Develop a new quantitative understanding of how information is represented, extracted and acted upon in biological, physical and social systems and exploit this understanding to advance future technologies.*

The final mission statement, presented below, was enthusiastically endorsed, and ratified using the "five finger" voting process.

Science of Information STC Mission Statement:

Advance science and technology through a new quantitative understanding of the representation, communication and processing of information in biological, physical, social and engineered systems.

B. Ethics Goal Discussion

As the group was revising the ethics goal statement, questions came up about what the NSF was looking for in regards to the training program. To clarify the issue and address questions, Joan Frye described the growing concern in Congress around the lack of ethics training and the strong mentoring of students. The NSF is looking for PIs and Centers to train students in the responsible conduct of research specifically for all undergraduate, graduate, and post doc

students who are involved in and/or supported by STC funds. Specific elements to address would include plagiarism, notebook documentation, authorship, social surveys, testing on animals, etc. STC members highlighted that this is as an opportunity for them to lead the way, especially in the field of authorship. To further the debate around authorship and create a threshold for who is listed as authors would be a valuable contribution.

C. SMART Objectives

Justine Foo introduced the use of SMART objectives, which are Specific, Measurable, Actionable, Realistic, and Time-bound targets that measure progress toward goal attainment. She reviewed the creation process and led the participants through the objective development. GLC encouraged the groups to focus on creating one or two strong objectives per goal statement. The group was divided into four, integrated small teams who were asked to also include a strategy connected to achieving any objectives they developed. The teams focused on developing SMART Objectives for the following four goal areas:

- Education, Human Resources, and Diversity
- Knowledge Transfer
- Leadership and Management
- Integrative Research

It was decided prior to the workshop that the STC members would not dedicate time to the creation of Ethics SMART Objectives as this goal is less project specific and can be developed by STC leadership and NSF staff.

The complete list of the SMART Objectives the participants developed can be found in Section V of this report.

D. Courageous Leadership

Bill Treasurer delivered a short presentation on the role that courage can play in both leadership and team development. Given the critical connection between effective collaboration and the STC's success, Bill's reflections centered on behaviors that hinder or help the building of trust in effective collaborative relationships.

A valuable conversation that resulted from this presentation focused on the need of the researchers to push themselves out of their comfort zones and think creatively about their research and possible collaborations. The work of the center is groundbreaking and revolutionary. To pursue these innovative research questions will require the STC members to rely on courage to try new ideas, tell one another about success and failure, and to trust one another in order to collaborate effectively.

F. Critical Success Factors and Action Items

Continuing in small groups, the STC teams brainstormed factors that are critical to the success of the project at the goal level. Critical success factors, or CSFs, are the things that absolutely must "go right" in order to achieve one or more goal. Focusing on one goal area, each small team was challenged to identify 4 – 8 CSFs for their goal area. After identifying the CSFs, GLC asked them to rank them in order of importance. That order for CSFs is followed in the draft strategic plan provided in Section V of this report.

The participants continued to work in small groups to brainstorm action items, which are the specific to do's that need to occur to support the critical success factors and objectives. Each potential action item was written on one piece of card stock paper. The action items were prioritized through a voting process. Each STC member was provided with four sticky dots and asked to identify which action item they thought was most critical under each goal area. Members stuck one dot, on one action item, under each of the goal items. Below are the action items that were identified to be most critical under each goal category.

Education, Human Resources, and Diversity

Action Items	Vote Tally
Create new course materials, text, instructor materials and modules.	7
Create a mentorship program with representatives at each institution.	4
Coordinate talks at Center institutions by leaders in the field of diversity outreach and engagement.	2
Partner with LSAMP, SROP, etc. and win new funding.	1
Create a repository of Science of Information course materials.	1
Send emails and updates to IT society.	1

Knowledge Transfer

Action Items	Vote Tally
Develop a compelling value proposition for industrial partners and mechanisms for publicizing this proposition.	12
Identify the person and resources needed to create and maintain the Center website.	5

Leadership and Management

ACTION ITEMS	VOTE TALLY
Each participating investigator will visit one of the other institutions every year.	8
Timely press releases highlighting research accomplishments for the general public.	4
Issue a brief statement itemizing the expectations for each participating investigator.	3
The Center Director will conduct a visit to each of the participating institutions.	3
STC website the key resource for visibility of our accomplishments.	1
Executive committee conducts yearly evaluations of each investigator's contribution to the STC.	1
Create cups, shirts, etc with Science of Information Center logo on them to foster Center identity.	1

Integrative Research

ACTION ITEMS	VOTE TALLY
Formulate 2-4 research problems for interdisciplinary teams to coalesce around.	11
Develop two short courses per year in different areas.	3
Develop 4-6 joint proposals for external funding.	2
Pair up senior investigators with junior faculty to provide mentoring.	1
Initiate 5 new collaborations through joint supervision, student exchange, joint publications, and/or presentations.	1
Make available three datasets per year fro the development of theoretical methods.	1

All of the action items are included in the draft strategic plan found is Section V of this report.

V: Emerging Frontiers of Science of Information Draft Strategic Plan

MISSION STATEMENT
Advance science and technology through a new quantitative understanding of the representation, communication and processing of information in biological, physical, social and engineered systems.

Education, Human Resources, and Diversity Goal Statement		
Integrate cutting-edge, multidisciplinary research and education efforts across the Center to advance the training and diversity of the work force.		
SMART Objectives		
Educate students, teachers and public in Science of Information as measured by: • Number of courses and modules at each school by first year. • Number of students enrolled and also affected/impacted. • Number of REUs and REU students.		
Increase diversity of students in SOI/STEM as measured by: • Increase 10% annually number of females, minorities, first generation, and low-income students. • Two presentations per school per year of SOI applications at URM institutions. • X number of visits by national diversity leaders each year. • Increase number of fellowship and scholarship by x% each year.		
Professional development in SOI/STEM as measured by: • Size of mentoring programs. • Number of internships. • Number of liaisons with external organizations and URM institutions. • Number of cross-institutional visits. • Number of student/faculty mentoring pairs.		
Make Science of Information a standalone discipline of study as measured by minors and concentrations in SOI by end of 3rd year.		
CSF: Build a critical mass of student interest in Science of Information.		
Action	**Completion Date**	**Point of Contact**
Create a student-led posters and brochures committee for dissemination of materials to high school students through college fairs, undergraduates, and high school and middle school counselors.	TBD	TBD
Host student exchanges between sites.	TBD	TBD
Organize student gatherings at conferences to discuss research results and possible collaborative ideas.	TBD	TBD
Give students papers to review and critique. Engage	TBD	TBD

students in the topic selection and idea generation stages.		
CSF: Institutional commitment for Center's Education, Human Resources, and Diversity activities.		
Action	**Completion Date**	**Point of Contact**
Form a committee of liaisons with representatives from each institution.	TBD	TBD
Obtain release time from departments to teach the courses.	TBD	TBD
CSF: Effective liaisons with industry and external organizations.		
Action	**Completion Date**	**Point of Contact**
Establish visibility with professional societies e.g. newsletters.	TBD	TBD
Arrange visits, internships, and liaisons with industry organizations.	TBD	TBD
CSF: Course materials and teaching resources available for Science of Information.		
Action	**Completion Date**	**Point of Contact**
Take inventory of existing Science of Information courses, texts, and materials within and outside Center institutions.	TBD	TBD
Create new course materials, text, instructor materials and modules.	July 2011	Deepak Kumar and Mark Ward
Plan and coordinate Science of Information course offerings across Center institutions.	TBD	TBD
Create a repository of Science of Information course materials.	TBD	TBD
CSF: Resources in place for educational programs diversity programs, and mentoring programs.		
Action	**Completion Date**	**Point of Contact**
Apply for REU funding.	TBD	TBD
Partner with LSAMP, SROP, etc. and win new funding.	TBD	TBD
Coordinate talks at Center institutions by leaders in the field of diversity outreach and engagement.	TBD	TBD
Identify and write grants for education funding.	TBD	TBD
CSF: Publicity and dissemination of Science of Information's HER programs.		
Action	**Completion Date**	**Point of Contact**
Send emails and updates to IT society.	TBD	TBD
Advertise at URM serving institutions.	TBD	TBD
Put links to resources on the Center website.	TBD	TBD
Create posters and handouts.	TBD	TBD
CSF: Targeted mentoring for all students, with a focus toward increasing diversity.		

Action	Completion Date	Point of Contact
Create a mentorship program with representatives at each institution.	TBD	TBD
Send out brochures to School of Science or School of Engineering at each school.	TBD	TBD
Appoint publicity ambassador at each institution.	TBD	TBD
Include a future faculty development component to the mentoring program for graduate and post-doc students.	TBD	TBD

Knowledge Transfer Goal Statement		
Develop effective mechanisms for intellectual exchanges between the center and external stakeholders to support the sharing of knowledge and the application of new technology.		
SMART Objectives		
Establish an SOI conference held annually with attendance of 100 by 2nd year.		
Increase the number of industrial affiliates by 5 by September 2011, by 20 by September 2013.		
Increase the number of industrially funded projects by 5 by September 2013, and by 10 by September 2015.		
Increase the number of full, online courses 2 by year 2 and 5 by year 5.		
Achieve at least 7.0 rating for 80% of content on Science of Information hub.		
Increase number of hits on Science of Information hub by 100% every year.		
Increase number of external links to the Science of Information hub by 100% each year, staring September 1, 2010.		
CSF: Human power for development, quality control, and publicity for Science of Information hub.		
Action	**Completion Date**	**Point of Contact**
Develop a compelling value proposition for industrial partners and mechanisms for publicizing this proposition.	By end of 2010	Ananth Grama
Identify the person and resources needed to create and maintain the Center website.	TBD	TBD
CSF: Institutional support and multi-institutional cooperation for course development.		
Action	**Completion Date**	**Point of Contact**
Identify lead for the creation of course content.	TBD	TBD
Outline the resources and institutional support needed for the creation of course content.	TBD	TBD
CSF: Run Science of Information conference for STC and outside participants.		
Action	**Completion Date**	**Point of Contact**
Create a conference development team; including representatives of each research thrust area, which will	TBD	TBD

identify the conference theme.		

Leadership and Management Goal Statement		
Accomplish the Center's mission through: • inspirational leadership. • inclusive and transparent decision-making. • catalyzing new research opportunities. • facilitating collaborative efforts.		
SMART Objectives		
NSF funds 50% of participants in Center activities by May 2011.		
Executive committee will hold formal activities at least four times per year to allow all Center participants to have a voice in the decision making of the Center.		
20% increase of students who independently post Center artifacts each semester on Science of Information website starting December 2010.		
CSF: The project must be interdisciplinary		
Action	**Completion Date**	**Point of Contact**
Executive committee conducts yearly evaluations of each investigator's contribution to the STC.	TBD	TBD
CSF: Conduct research that would not have happened without the STC.		
Action	**Completion Date**	**Point of Contact**
Each participating investigator will visit one of the other institutions every year.	TBD	TBD
CSF: Instill a sense of pride in membership in the Center.		
Action	**Completion Date**	**Point of Contact**
The Center Director will conduct a visit to each of the participating institutions.	TBD	TBD
Create cups, shirts, etc with Science of Information Center logo on them to foster Center identity.	TBD	TBD
CSF: A harmonious leadership and management team.		
Action	**Completion Date**	**Point of Contact**
Issue a brief statement itemizing the expectations for each participating investigator.	TBD	TBD
STC website the key resource for visibility of our accomplishments.	TBD	TBD
Timely press releases highlighting research accomplishments for the general public.	TBD	TBD
Create a reputation for excellence in research and innovation.	TBD	TBD

Integrative Research Goal Statement		
Create a shared intellectual space, integral to the Center's activities, providing a collaborative research environment that crosses disciplinary and institutional boundaries.		
SMART Objectives		
Formulate 2-4 research problems for interdisciplinary team to coalesce around in 2 years.		
Identify and post on website two grand challenge problems in two years on a web bulletin board.		
Five investigator exchange visits per year for immersive activity (greater than or equal to 1 week).		
Every investigator to give one or more talks each year in another institution. Target 15 talks per year and 10 by year 1.		
Initiate five new collaborations by year two through joint supervision, student exchange, join publication, and presentations.		
Application teams make available three datasets per year for development of theoretical methods. X outcome measured by number of models developed in five years.		
Development of two pedagogical resources (e.g. books, survey, papers) at the interface of applications and theory in five years.		
Development of 4-6 proposals for external funding within five years.		
CSF: Creation of a shared intellectual space for the development of the research priorities.		
Action	**Completion Date**	**Point of Contact**
Start monthly videoconferences for all Center participants.	TBD	TBD
Develop two pedagogical resources.	TBD	TBD
Record and post all talks, seminars, and presentations to website.	TBD	TBD
Identify two grand challenge problems to post on website.	TBD	TBD
CSF: Bridge the language barrier that divides different research disciplines.		
Action	**Completion Date**	**Point of Contact**
Develop a thesaurus and/or other immersive applications for commonly used terms in the different disciplines.	TBD	TBD
Create a wiki space for expert question and answer interaction.	TBD	TBD
Develop two short courses per year in different areas.	TBD	TBD
CSF: Extend beyond our comfort zone in order to take risks and experiment with new collaborations and possibilities.		
Action	**Completion Date**	**Point of Contact**
Write Science or Scientific American article in two years or less on the Science of Information and the Center's point of view.	TBD	TBD

Make a brochure/website of research interests and expertise of all Center participants in order to identify potential collaborations.	TBD	TBD
Make available three datasets per year fro the development of theoretical methods.	TBD	TBD
Pair up senior investigators with junior faculty to provide mentoring.	TBD	TBD
Initiate 5 new collaborations through joint supervision, student exchange, joint publications, and/or presentations.	TBD	TBD
Formulate 2-4 research problems for interdisciplinary teams to coalesce around.	Within 18 months.	Andrea Goldsmith and David Tse
CSF: Secure additional funding for interdisciplinary activities in Science of Information.		
Action	**Completion Date**	**Point of Contact**
Identify funding sources that will support administrative and other coordinating staff positions.	TBD	TBD
Invite directors of group/agencies of extramural funding for initiating new research.	TBD	TBD
Develop 4-6 joint proposals for external funding.	TBD	TBD

Ethics Goal Statement		
Implement a multidisciplinary and multi-institutional program to inform and guide all members of the Center on the ethical and responsible conduct of scientific research.		
SMART Objectives		
TBD		
CSF: To be developed		
Action	**Completion Date**	**Point of Contact**
TBD	TBD	TBD

Following is a one-page view of the strategic plan. This represents the highest level of information and includes: mission, goal statements, and objectives and measures connected to each of the goal areas. For ease of editing, this image has also been included as a PowerPoint, which can be conveniently updated and shared.